WHAT IS CLAIMED IS:

1. A portable card adapted to be used in a card processing system having a data processing station comprising

a data storage device adapted to interact with a data processing station when a portable card and a data processing station are moved relative to each other, said data storage device including

a substrate having a predetermined shape;

at least one layer of high density, high coercivity magnetic material for storing magnetic signals; and

a relatively hard, abradeable protective coating formed on said magnetic material layer and being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said magnetic material layer and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating.

2. The portable card of claim 1 wherein said at least one magnetic material layer is a thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

3. The portable card of claim 1 wherein protective coating has at least one layer which includes a magnetically permeable, magnetically saturable material.

4. The portable card of claim 1 wherein protective coating has at least two layers wherein one of said layers includes a magnetically permeable, magnetically saturable material and the other of said layers is a non-magnetic friction reducing layer formed on said one of said layers.

5. The portable card of claim 1 wherein said at least one magnetic material layer is formed of a high density, high coercivity magnetic material having a predetermined magnetic field orientation and wherein said protective coating has at least one layer which includes a magnetically permeable, magnetically saturable material and wherein said data storage device further includes

a non-magnetic material layer positioned between the protective coating and said at least one magnetic material layer, said magnetically permeable, magnetically saturable material being responsive through said non-magnetic layer to predetermined magnetic field orientation to produce a magnetic image field in a direction opposite to said predetermined magnetic field orientation.

6. The portable card of claim 1 said at least one magnetic material layer is formed of a high density, high coercivity magnetic material having a predetermined magnetic field orientation and wherein said protective coating has at least two layers wherein said one of said layers includes a magnetically permeable, magnetically saturable material and the other of said layers is a non-magnetic abrasion friction reducing layer formed on said one of said layers and wherein said data storage device further includes

a non-magnetic material layer positioned between the protective coating and said at least one magnetic material layer, said magnetically permeable, magnetically saturable material being responsive through said non-magnetic layer to predetermined magnetic field orientation to produce a magnetic image field in a direction opposite to said predetermined magnetic field orientation.

7. The portable card of claim 1 wherein said protective has an outer surface that is cleanable.

8. The portable card of claim 1 wherein said substrate has two surfaces and said protective coating is applied to at least one of said two surfaces.

9. The portable card of claim 1 wherein said substrate has two surfaces and said protective coating is applied to at least one of said two surfaces and wherein said data storage device is located on the other of said two surfaces and said protective coating is applied to at least said data storage device.

10. The portable card of claim 1 wherein said substrate has two surfaces and wherein said data storage device is located on one of said two surfaces and said protective coating is applied to at least said data storage device.

11. The portable card of claim 1 having an obverse side and a converse side and wherein said substrate has two surfaces and wherein said data storage device is located on one of said two surfaces and said protective coating is applied to each of said obverse side and converse side.

12. The portable card of claim 1 wherein said protective coating has an outer surface and further comprises

a bonded lubricant layer formed on said outer surface and having a thickness which is less that the thickness of said protective coating.

13. The portable card of claim 1 wherein said protective coating thickness is in the range of about 700 Angstroms to about 1050 Angstroms.

14. The portable card of claim 1 wherein said protective coating thickness includes two substantially parallel layers one of which is formed of a magnetically permeable, magnetically saturable material having a thickness in the range of about 50 Angstroms to about 750 Angstroms and the other of which is a diamond-like carbon layer having a thickness in the range of about 150 Angstroms to about 300 Angstroms.

15. The portable card of claim 14 wherein said protective coating thickness is in the range of about 700 Angstroms to about 1000 Angstroms.

16. The portable card of claim 15 wherein said protective coating thickness is about 550 Angstroms.

17. The portable card of claim 1 wherein said protective coating thickness includes one layer which is formed of a magnetically permeable, magnetically saturable material having a thickness in the range of about 50 Angstroms to about 750 Angstroms and wherein said non-magnetic material layer has a thickness in the range of about 20 Angstroms to about 150 Angstroms.

18. The portable card of claim 1 wherein said protective coating thickness includes two substantially parallel layers one of which is formed of a magnetically permeable, magnetically saturable material having a thickness in the range of about 50 Angstroms to about 750 Angstroms and the other of which is a diamond-like carbon layer having a thickness in the range of about 150 Angstroms to about 300 Angstroms and wherein said non-magnetic material layer has a thickness in the range of about 20 Angstroms to about 150 Angstroms.

19. The portable card of claim 1 wherein said protective coating thickness includes two substantially parallel layers one of which is formed of a magnetically permeable, magnetically saturable material having a thickness about 400 Angstroms and the other of which is a diamond-like carbon layer having a thickness about 150 Angstroms.

20. The portable card of claim 1 wherein said protective coating thickness includes two substantially parallel layers one of which is formed of a magnetically permeable, magnetically saturable material having a thickness about 400 Angstroms and the other of which is a diamond-like carbon layer having a thickness about 150 Angstroms and wherein said non-magnetic material layer has a thickness in the range of about 20 Angstroms to about 150 Angstroms.

21. The portable card of claim 1 wherein said protective coating is adapted to interface with and be responsive to a data processing station when said substrate and data processing station are moved relative to each other to position said substrate proximate said data processing station to enable data flow therebetween.

22. The portable card of claim 1 wherein said substrate is moved relative to said data processing station.

23. The portable card of claim 1 wherein said data processing station is moved relative to said substrate.

24. The portable card of claim 1 wherein said data processing station and said substrate are moved relative to each other.

25. The portable card of claim 1 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally rectangular in shape.

26. The portable card of claim 25 wherein said substantially planar and generally rectangular shaped substrate including said data storage device is transported past a data processing station.

27. The portable card of claim 1 wherein said substrate is substantially planar and generally rectangular in shape and said data storage device is generally circular in shape.

28. The portable card of claim 27 wherein said generally circular shaped data storage device is fixedly mounted within said substantially planar and generally rectangular shaped substrate.

29. The portable card of claim 28 wherein said substantially planar and generally rectangular shaped substrate including said generally circular shaped data storage device data storage device is rotable proximate a data processing station.

30. The portable card of claim 27 wherein said generally circular shaped data storage device is rotatably mounted within said substantially planar and generally rectangular shaped substrate.

31. The portable card of claim 30 wherein said substantially planar and generally rectangular shaped substrate including said generally circular shaped data storage device data storage device is positioned proximate a data processing station and said generally circular shaped data storage device data storage device is rotated relative thereto.

32. The portable card of claim 2 wherein said thin film layer of magnetic material has an areal density of about 2 megabits per sq. in. to about 10 gigabits per sq. in.

33. The portable card of claim 1 wherein said transducer is an inductive head.

34. The portable card of claim 33 wherein said thin film layer of magnetic material has an areal density of about 2 megabits per sq. in. to about 20 megabits per sq. in.

35. The portable card of claim 1 wherein said transducer is a thin film head.

36. The portable card of claim 2 wherein said transducer is a magnetoresistive head and said thin film layer of magnetic material has an areal density of about 20 megabits per sq. in. to about 200 megabits per sq. in.

37. The portable card of claim 2 wherein said transducer is a giant magnetoresistive (GMR) head and said thin film layer of magnetic material has an areal density of about 20 megabits per sq. in. to about 10 gigabits per sq. in.

38. The portable card of claim 2 wherein said thin film layer of magnetic material has a predetermined magnetic field orientation that is substantially perpendicular to at least one surface of said substrate.

39. The portable card of claim 2 wherein said thin film layer of magnetic material has a predetermined magnetic field orientation that is substantially parallel to a data processing station.

40. The portable card of claim 2 wherein said thin film layer of magnetic material has a predetermined magnetic field orientation that is at an acute angle to a data processing station.

41. A portable card of claim 40 wherein the acute angle is in a range of between about 15 degrees and about 45 degrees from a vertical axis to said substrate.

42. The portable card of claim 2 wherein said at least one thin film layer of high density, high coercivity magnetic material is a sputtered layer.

43. The portable card of claim 2 wherein said at least one thin film layer of high density, high coercivity magnetic material is a platted layer.

44. The portable card of claim 2 wherein said at least one thin film layer of high density, high coercivity magnetic material is an oxide layer.

45. The portable card of claim 2 wherein said at least one thin film layer of high density, high coercivity magnetic material is a web coated layer.

46. A card and card writer/reader system comprising

an encodeable card having

a body having upper and lower surfaces and side and end edges, said body including on at least one of said upper and lower surfaces a data storage section adapted to interact with a data processing station when said card and said data processing station are moved relative to each other to at least one of write encoding signals in said data storage section and read encoded signals from said data storage section, said data storage section including

at least one layer of high density storage material for storing data, and

a diamond-like hardness, abradeable protective coating formed on said at least one high density storage material layer and being selected to have a thickness between a maximum thickness which would materially attenuate encoding and encoded signals passing between said storage material layer and a transducer and a minimum thickness enabling said protective

coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating; and

a writer/reader having a transducer for at least one of writing encoding signals in said data storage section and reading encoded signals from said data storage section during relative movement of said card relative to the data processing station to enable data flow between said data storage section and said transducer.

47. The card and card writer/reader system of claim 46 wherein said an encodeable card is a magnetically encodeable card and wherein said data storage section has at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

48. The card and card reader system of claim 47 wherein said transducer is an inductive head.

49. The card and card reader system of claim 47 wherein said transducer is a thin film head.

50. The card and card reader system of claim 47 wherein said transducer is a magnetoresistive head.

51. The card and card reader system of claim 47 wherein said transducer is a giant magnetoresistive (GMR) head.

52. The card and card reader system of claim 46 wherein said encodeable card is an optically encodeable card and wherein said data storage section has at least one layer of high density, optical recording material which is capable of reading and storing data in optical form.

53. The card and card reader system of claim 46 wherein said transducer is a laser adapted to reading and record optical data on said optical recording material.

54. The card and card reader system of claim 46 wherein said encodeable card is a magneto-optical encodeable card and wherein said data storage section has at least one layer of high density, magneto-optical recording material which is capable of reading and storing data.

55. A card and card writer/reader system comprising

a magnetically encodeable card having

a body having upper and lower surfaces and side and end edges, said body including on at least one of said upper and lower surfaces a data storage device adapted to interact with a data processing station when said card and said data processing station are moved relative to each other, said data storage device including at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data;

a diamond-like hardness, abradeable protective coating formed on said thin film magnetic material layer and being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said magnetic material layer and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating;

a first transducer for reading said magnetically encoded signals from said data storage device during relative movement of said card relative to the data processing station to enable data flow between said data storage device and said transducer; and

a second transducer for writing magnetically encoding signals in said data storage device as magnetically encoded signals during relative movement of said card relative to the data processing station to enable data flow between said data storage device and said transducer.

56. The card and card writer/reader system of claim 55 wherein said transducer is an inductive head.

57. The card and card writer/reader system of claim 55 wherein said transducer is a thin film magnetic head.

58. The card and card writer/reader system of claim 55 wherein said transducer is a magnetoresistive head.

59. The card and card writer/reader system of claim 55 wherein said transducer is a giant magnetoresistive (GMR) head.

60. The card and card writer/reader system of claim 58 wherein said magnetoresistive head includes a dual stripe magnetoresistive element.

61. The card and card writer/reader system of claim 58 wherein said magnetoresistive head includes a magnetic flux guide for conducting magnetic flux from said data storage section of said card read by said reader to said magnetoresistive head.

62. The card and card writer/reader system of claim 58 wherein said data storage device includes data tracks having a predetermined width formed on a selected surface of said card and wherein said predetermined width is wider than said magnetoresistive head.

63. The card and card writer/reader system of claim 58 wherein said data storage device includes data tracks having a predetermined width formed on a selected surface of said card wherein said predetermined width is in the range of about "1" times to about "2" times wider than said magnetoresistive head.

64. A method for reading a card with a card reader comprising the steps of

forming on a substrate of a card a data storage section adapted to interact with a data processing station when said card and said data processing station are moved relative to each other to at least one of write encoding signals in said data storage section as encoded signals and read encoded signals from said data storage section;

forming a relatively hard, abradeable protective coating on said data storage section wherein said protective coating has a thickness between a maximum thickness which would materially attenuate encoding and encoded signals passing between said data storage section and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating; and

moving said card and data processing station relative to each other to interface said data storage section relative to a transducer to enable data flow therebetween.

65. The method of claim 64 wherein the step of forming includes forming a data storage device having at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data.

66. The method of claim 65 wherein said step of moving includes using a transducer that is an inductive head.

67. The method of claim 65 wherein said step of moving includes using a transducer that is a thin film head.

68. The method of claim 65 wherein said step of moving includes using a transducer that is a magnetoresistive head.

69. The method of claim 65 wherein said step of moving includes using a transducer that is a giant magnetoresistive (GMR) head.

70. The method of claim 64 wherein the step of forming includes forming a data storage section having at least one thin film layer of high density, optical recording material which is capable of reading and storing data in optical form.

71. The method of claim 64 wherein the step of forming includes forming a data storage section having at least one thin film layer of high density, magneto-optical recording material which is capable of reading and storing data in magneto-optical form.

72. The method of claim 64 wherein the step of moving includes using a transducer which is a laser adapted to read and record optical data on said optical recording material.

73. A method for reading a card with a card reader comprising the steps of

forming on a substrate of a card a data storage section including a thin film of magnetic material having a predetermined magnetic orientation for storing data in a predetermined axis;

forming on said data storage section a bendable, diamond like hardness protective coating having a thickness which allows passage of magnetic signals in an ambient natural atmospheric operating environment through said protective layer and said thin film layer, said protective layer being formed of a material which resists at least one of chemical, magnetic and mechanical degradation of the data storage device; and

moving said card and data processing station relative to each other to interface said data storage section relative to a transducer to enable data flow therebetween.

74. A data storage device comprising

at least one layer of high density, high coercivity magnetic material for storing data; and

a relatively hard, abradeable protective coating formed on said magnetic material layer and being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said magnetic material layer and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of said protective coating material.

75. The data storage device of claim 74 wherein said protective coating is of a diamond-like hardness forming a bendable, abradeable protective coating.

76. The data storage device of claim 74 wherein said protective coating is formed of a magnetically permeable, magnetically saturable material and the known quantity of magnetically permeable, magnetically saturable material removed by usage is to that minimum thickness thereof which is capable of supporting magnetic flux density of a reading signal.

77. The data storage device of claim 74 wherein said protective coating is formed of a magnetically permeable, magnetically saturable material and the known quantity of magnetically permeable, magnetically saturable material removed by usage is to a thickness at which the magnetically permeable, magnetically saturable material commences to emit a detectable quantity of magnetic flux leakage.

78. The data storage device of claim 74 wherein the magnetic material layer is formed of a substantially isotropic material.

79. The data storage device of claim 78 wherein the isotropic material is a magnetic thin film allow including platinum.

80. The data storage device of claim 74 wherein the magnetic material is formed of an anisotropic material.

81. The data storage device of claim 80 wherein said magnetic material has a predetermined field of orientation for storing magnetic signals.

82. The data storage device of claim 80 wherein magnetic material layer has at least one surface and said predetermined field of orientation is in a direction substantially parallel to said one surface.

83. The data storage device of claim 80 wherein magnetic material layer has at least one surface and said predetermined field of orientation is in a direction substantially perpendicular to said one surface.

84. The data storage device of claim 80 wherein magnetic material layer has at least one surface and said predetermined field of orientation is in a direction at a predetermined angle to said one surface.

85. The data storage device of claim 80 wherein magnetic material layer has at least one surface and said predetermined field of orientation is in a direction at an oblique angle to said one surface.

86. The data storage device of claim 74 wherein said protective coating has at least one layer which includes a magnetically permeable, magnetically saturable material.

87. The data storage device of claim 74 wherein said protective coating has at least two layers wherein one of said layers includes a magnetically permeable, magnetically saturable material and the other of said layers is a non-magnetic friction reducing layer formed on said one of said layers.

88. The data storage device of claim 74 wherein said data storage device further comprises

a bonded, cleanable lubrication layer formed on said protective coating.

89. A data storage device comprising

a substrate having at least one surface;

at least one high density magnetically coercive material layer disposed on said substrate for storing magnetic signals with the coercive material axis of magnetization oriented in a predetermined direction relative to said at least one surface of said substrate; and

a bendable, diamond like hardness protective coating having a thickness which allows passage of magnetic signals in an ambient natural atmospheric operating environment through said protective layer and between said at least one high density magnetically coercive material layer and a transducer, said protective layer being formed of a material which resists at least one of chemical, magnetic and mechanical degradation of the data storage device.

90. The data storage device of claim 89 further comprising

at least one non-magnetic material layer disposed on said substrate and between said protective coating and said at least one high density magnetically coercive material layer for defining an exchange break layer.

91. The data storage device of claim 90 wherein said substrate is a non-magnetic substrate and said protective coating includes

a magnetically permeable, magnetically saturable material disposed on said substrate and being responsive through said exchange break layer to the coercive material axis of magnetization in said predetermined direction to produce a magnetic image field in a direction opposite to said predetermined direction.

92. The data storage device of claim 90 wherein said protective coating includes said magnetically permeable, magnetically saturable material as a separate independent layer disposed on said exchange break layer.

93. The data storage device of claim 90 wherein said protective coating includes a non-magnetic friction resisting layer as a separate independent layer disposed on said magnetically permeable, magnetically saturable material layer.

94. The data storage device of claim 89 wherein said predetermined direction is orientated substantially parallel to said at least one surface of said substrate.

95. The data storage device of claim 89 wherein said predetermined direction is orientated at an acute angle to said at least one surface of said substrate.

96. The data storage device of claim 89 wherein said predetermined direction is orientated substantially perpendicular to said at least one surface of said substrate.

97. A magnetically encoded card comprising

a non-magnetic substrate having at least one surface,

a thin film, high density magnetically coercive material disposed on said substrate for storing magnetic signals with the coercive material axis of magnetization oriented in a predetermined direction relative to said at least on surface of said substrate;

a non magnetic material disposed on said substrate for defining an exchange break layer; and

a relatively hard, bendable, abradeable protective coating formed on said magnetic material layer and being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said magnetic material layer and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating.

98. The magnetically encoded card of claim 97 wherein said protective coating is formed on said substrate in a direction substantially normal to said exchange break layer, said protective coating including a magnetically permeable, magnetically saturable material disposed on said substrate and being responsive through said exchange break layer and said magnetically saturable material to the coercive material axis of magnetization to produce a magnetic image field in a direction to facilitate passage of magnetic signals in an ambient natural atmospheric operating environment through said exchange break layer and said magnetically saturable material, said coercive material having said axis of magnetization in said predetermined direction.

99. The magnetically encoded card of claim 97 wherein said protective coating includes said magnetically permeable, magnetically saturable material as an independent layer disposed on said substrate.

100. The magnetically encoded card of claim 97 wherein said protective coating includes a non-magnetic friction resisting material as a separate layer disposed on said magnetically permeable, magnetically saturable material.

101. The magnetically encoded card of claim 97 wherein said predetermined direction is orientated substantially parallel to said at least one surface of said substrate.

102. The magnetically encoded card of claim 97 wherein said predetermined direction is orientated at an acute angle to said at least one surface of said substrate.

103. The data storage device of claim 97 wherein said predetermined direction is orientated substantially perpendicular to said at least one surface of said substrate.

104. The magnetically encoded card of claim 97 wherein the magnetically coercive material is at least 1,000 Oersteds and wherein said magnetically permeable, magnetically saturable material is less than about 100 Oersteds.

105. A magnetic signal processing apparatus comprising

a magnetic recording medium having

a high density magnetically coercive material for storing magnetic signals with the coercive material axes of magnetization oriented in a predetermined direction:

a non-magnetic material disposed on said high density magnetically coercive material for defining a exchange break layer;

a bendable, relative hard, protective coating including a magnetically permeable, magnetically saturable material disposed on said exchange break layer and being responsive through said exchange break layer to the coercive material axes of magnetization to produce a magnetic image field in a direction opposite to said predetermined direction, said protective coating being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said magnetic material layer and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating;

a magnetic transducer positioned relative to a surface of said recording medium for transferring signals with respect to the recording medium;

a drive member operatively coupled to at least one of said transducer and said recording medium to provide relative movement therebetween; and

a magnetic control device having a bias field adapted to increase through said protective coating the reluctance of said magnetic saturable, magnetically permeable material to enable a magnetic signal to pass between said high density magnetically coercive material through said exchange break layer and said protective coating to said magnetic transducer.

106. In a method of processing magnetic signals using a magnetic recording medium having a high density magnetically coercive material for storing magnetic signals with the coercive material axes of magnetization oriented in a predetermined direction comprising the steps of:

providing a layer of a non-magnetic material disposed on said high density magnetically coercive material for defining a exchange break layer;

providing a protective coating including a magnetically permeable, magnetically saturable material which is disposed on said exchange break layer and responsive through said exchange break layer to the coercive material axes of magnetization to produce a magnetic image field in a direction opposite to said predetermined direction, said protection coating being formed of a material which resists at least one of chemical, magnetic and mechanical degradation of the magnetic recording medium; and

generating with a magnetic control device having a bias field adapted to increase through said protective coating and said exchange break layer the reluctance of said magnetic saturable, magnetically permeable material to enable the magnetic signal to pass between said high density magnetically coercive material through said exchange break layer and said protective coating to a magnetic transducer.

107. A system comprising

a magnetic recording medium having

a high density magnetically coercive material for storing magnetic signals with the coercive material axes of magnetization oriented in a predetermined direction:

a non-magnetic material disposed on said high density magnetically coercive material for defining a exchange break layer;

a relatively hard, abradeable protective coating formed on said magnetic material layer and being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said a high density magnetically coercive material and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating;

a magnetic transducer positioned relative to a surface of said recording medium for transferring signals with respect to the recording medium;

a drive member operatively coupled to at least one of said transducer and said recording medium to provide relative movement therebetween;

a magnetic control device having a bias field adapted to increase through said protective coating the reluctance of said magnetic saturable, magnetically permeable material to enable the magnetic signal to pass between said high density magnetically coercive material through said exchange break layer and said protective coating to said magnetic transducer; and

a programmable control device operatively connected to said magnetic control device to cause said bias field to be applied to said recording medium when a selected magnetic image is located substantially adjacent said transducer.

108. The system of claim 107 wherein said protective coating has at least one layer which includes a magnetically permeable, magnetically saturable material.

109. The system of claim 107 wherein said protective coating has at least two layers wherein one of said layers includes a magnetically permeable, magnetically saturable material and the other of said layers is a non-magnetic abrasion resisting layer formed on said one of said layers.

110. The system of claim 107 wherein said protective coating has at least one layer which includes a magnetically permeable, magnetically saturable material and wherein said data storage device further includes

a non-magnetic material layer positioned between the protective coating and said high density magnetically coercive material, said magnetically permeable, magnetically saturable material being responsive through said non-magnetic layer to the coercive material axis of magnetization in said predetermine direction to produce a magnetic image field in a direction opposite to said predetermined direction.

111. The system of claim 107 wherein said protective coating has at least two layers wherein said one of said layers includes a magnetically permeable, magnetically saturable material and the other of said layers is a non-magnetic abrasion resisting layer formed on said one of said layers and wherein said data storage device further includes

a non-magnetic material layer positioned between the one of said layers of the protective coating and said high density magnetically coercive material, said magnetically permeable, magnetically saturable material being responsive through said non-magnetic layer to the coercive material axis of magnetization in said predetermine direction to produce a magnetic image field in a direction opposite to said predetermined direction.

112. A data storage device comprising

at least one thin film layer of high density, high coercivity magnetic material having a predetermined magnetic field orientation for storing data; and

a relatively hard, abradeable protective coating formed on said magnetic material layer and being selected to have a thickness between a maximum thickness which would materially attenuate magnetic signals passing between said at least one thin film layer and a transducer and a minimum thickness enabling said protective coating to be abraded by usage in an ambient natural atmosphere operating environment for removing therefrom a known quantity of the protective coating, said data storage device being adapted to interface with and be responsive to a transducer when said data storage device and said transducer are moved relative to each other to enable data flow therebetween.

113. The data storage device of claim 111 wherein said protective coating has at least one layer which includes a magnetically permeable, magnetically saturable material.

114. The data storage device of claim 112 wherein said protective coating has at least two layers wherein one of said layers includes a magnetically permeable, magnetically saturable material and the other of said layers is a non-magnetic abrasion resisting layer formed on said one of said layers.

115. The data storage device of claim 112 wherein said data storage device further comprises

a bonded, cleanable lubrication layer applied to outer surface of said protective coating, said bonded, cleanable lubrication layer having a thickness which is less than the thickness of said protective coating.